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LARGE AND SMALL GROUP TYPEWRITING PROJECT.

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AN INVESTIGATION WAS CONDUCTED TO DETERMINE IF GROUPS OF HIGH SCHOOL STUDENTS NUMERICALLY IN EXCESS OF 50 COULD BE AS EFFECTIVELY INSTRUCTED IN TYPEWRITING SKILLS AS GROUPS OF LESS THAN 30. STUDENTS ENROLLED IN 1ST-YEAR TYPEWRITING WERE RANDOMLY ASSIGNED TO TWO LARGE GROUPS AND THREE SMALL GROUPS TAUGHT BY THE SAME INSTRUCTOR. TEACHER-MADE, 3-MINUTE TIMED WRITING TESTS WERE ADMINISTERED IN SEPTEMBER AND IN MAY. THE RESULTS INDICATED THAT THE SMALL GROUPS DID NOT ACHIEVE SIGNIFICANTLY GREATER IN TYPEWRITING SKILLS THAN THE LARGE GROUPS. (SF)

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LARGE AND SMALL GROUP TYPEWRITING PROJECT

Ed W. Clark High School
Las Vegas, Nevada

001 102

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LARGE AND SMALL GROUP TYPEWRITING PROJECT

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March, 1967

INTRODUCTION

It has often been assumed that the only effective way to teach typewriting skills is in a classroom designed for 30 to 35 stations with the teacher in complete audio and/or visual contact with all students at all times. This philosophy is based on the supposition that students begin the day at the same point and end the day with a completed, or partially completed, given assignment. For the slower student this frequently means going on to something new before he masters the old. For the faster student this approach to teaching typewriting skills might mean that upon completion of the problem the student either does "more of the same" or becomes a discipline problem because he has nothing to do but bother someone who has not completed the assignment.

A number of recent research investigations in the teaching of typewriting skills has considered such factors as class achievement, individual achievement, school architecture, and automated teaching aids. Also, areas such as student interest, cooperativeness, and persistence have been investigated. Teacher traits, students' reasons for enrolling in typewriting classes, students' vocational plans and teacher reaction to large groups have also served as focal points for research.

Much research related to teaching typewriting skills remains to be completed. This research is an attempt to help answer the questions centered on the value of teaching typewriting skills to a large number of students simultaneously.

Purpose

It was the purpose of this design to discover if groups of students in excess of 50 in number could be as effectively instructed in typewriting skills as groups of less than 30 in number.

Hypotheses

1. Small groups consisting of less than 30 students in number will not achieve significantly greater in typewriting skills than will large groups including more than 60 students in number.

2. A positive and significant relationship between the Coding sub-test of the Wechsler Intelligence Scale for Children and achievement in typewriting will be discovered.

3. The Coding sub-test of the Wechsler Intelligence Scale for Children will effectively predict success in typewriting skills.

Justification and significance of the study

Need for recognition of individual rate of learning and progress is nothing new in education. "In 1916, the psychologist Terman suggested a need for differentiated courses of study, to permit each pupil 'to progress at the rate which is normal for him, whether that rate be rapid or slow.' "[1] In the present investigation an attempt was made to develop a program in which the student was no longer in direct competition with his peers but only with himself and to establish criteria for evaluating student interest and achievement in such a program of change.

It was also the intent of this study to determine if one teacher could teach typewriting skills to a group of 100 students as effectively as to a group of 35 students. If so, it would be apparent that there would be an appreciable savings in money and in teaching time. This savings in money could be put to effective use in the purchase of automated teaching aids which would result in an even more effective teaching program. The savings in teaching time would mean more teachers available for expanded course offerings--course offerings which would help the student adjust to his modern, complex business and social environment.

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[1]Ronald C. Doll (ed.), Individualizing Instruction, (Washington: Association for Supervision and Curriculum Development, NEA, 1964), pp. 9-10.

REVIEW OF THE LITERATURE

The plans and procedures for teaching typewriting skills discussed herein are but a few in practice in schools today. Many schools have experimented with class size and with different approaches to the method of teaching larger classes. Existing class size has often been determined more by physical plant structure than by research results.

One of the foremost proponents of large group instruction is Dr. J. Lloyd Trump, Chairman of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. Following the investigation conducted by this commission, Dr. Trump stated, "Tomorrow's schools will use classes of 100 to 150 students or more whenever the desired educational purpose can be best achieved in large groups."[2]

Class size

Dr. Alan C. Lloyd, Senior Editor of Gregg Typing Publications, has stated that the achievement scores will prove to be just as good when there are 110 students in one class as when there are 110 students in three or four classes--no better, no worse.[3]

At Van Nuys High School in Van Nuys, California, Abel was assigned to teach a beginning typewriting class of 125 students in a six-week summer session with daily two-hour class sessions. She was assisted by an experienced teacher who handled the routine tasks of taking roll, making minor repairs; setting up the microphone, phonograph, tape recorder; and recording grades. The assistant "cruised" the room helping individual students. Abel presented all lessons, conducted demonstrations, and offered explanations.

> A glance at the distribution of final marks indicates that the students achieved as well as they would have in an ordinary class; and I believe they accomplished even more. They had the distinct advantage of having the complete, uninterrupted attention of one teacher; and much of the time they had two teachers available to answer questions, offer help, and improve techniques.

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[2]J. Lloyd Trump and Dorsey Baynham, Focus on Change, (Chicago: Rand McNalley and Co., 1961) p. 46.

[3]Alan C. Lloyd. Personal Communication. October 25, 1965.

> Apparently, there is nothing magic about teaching 35 to 45 students in beginning typing, since a teacher with an assistant can handle three times as many. . .[4]

Changing methods

Teachers of typewriting may well desire to get out from behind the desk and use their classroom time to observe their students for proper techniques. However, the large number of papers a teacher of beginning typewriting must check has been a deterrent to this accomplishment. In discussing the achievement of large group classes, Lloyd offered the following thought:

> I discussed this matter with the teachers in Oakland. . . .The teachers could not explain why the large-class groups did as well as the small ones. My own explanation: that the teacher of the large classes marked fewer papers, and it would appear from many researches that students progress more rapidly when teachers mark fewer papers.[5]

There are many varied plans which have been offered to reduce and simplify the grading of papers.

> It is imperative that a system be devised that will enable the teacher to carry out the cardinal axion of good typewriting instruction--constant individual observation during all stages of skill development--and still permit adequate evaluation of an appropriate portion of the tremendous output from those legions of marching fingers.[6]

The author of the above statement presented a plan, which, basically, correlates typewriting instruction with accepted business management principles. The class is organized as a business is organized. The students become "employees" and the teacher becomes the "office manager." The office manager appoints "section supervisors," who are responsible for the employees in that row. The section

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[4]Rosalyn S. Abel, "We Taught Beginning Typing to a Class of 125," Business Education World, XLI (February, 1961), pp. 10-11, 32-33.

[5]Lloyd, loc. cit.

[6]Curtis O. Arnold, "Your Large Typewriting Class--Efficiency or Chaos?", Business Education Forum, XVIII (May, 1964), p. 40.

supervisor is responsible for checking the papers of his employees and grading them accofding to the office manager's pre-determined grading standards. These papers are then submitted for posting. The objectives of this plan were to facilitate a smooth and orderly flow of paperwork, ease the paper burden of the teacher, involve students in an office situation, and permit fair and accurate checking of all work submitted for evaluation.[7]

Many new methods and procedures have been devised as a departure from a standard textbook program. In Tulsa, Oklahoma, the savings in teacher salaries effected by large group instruction was used to purchase tape equipment, commercial tapes correlated with the textbook, and blank tapes on which the teachers prepared lessons for which there were no prepared commercial tapes. The typing room, which had 74 stations, was equipped with four channels and a headset for each station. On one channel the teacher ran the tape for the current lesson; a second channel held the tape for the lesson of the previous day. The third channel usually had an accuracy or clinic tape to offer, and the fourth channel had a speed drive or speed clinic tape. The school operated on a schedule of four 70-minute periods a week for each subject taught. At the beginning of the typing period, students ready for the current lesson employed the first channel; then, depending on the outcome of their timed writing in the new lesson, used the second half of the period for the speed or accuracy tape, as appropriate. Most students attended most days. This meant that most of the students received, in effect, a new-content lesson and a skill-drive lesson each day, four days a week.[8]

Lloyd, reporting on the Tulsa program, stated:

> In one high school, I personally gave the end of the semester test; the children averaged the skill level that we say in the teacher's manual is expected at the end of a full year.[9]

This arrangement permitted flexibility in teaching different levels of typewriting proficiency. The poorer student, or the one who had missed classes, could listen to tapes on his level and the faster student could work with new materials. The teacher was free to give individual assistance.

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[7]Ibid, p. 46

[8]Agnes Schellstede, "Teaching Typing with Tapes," Business Education World, XLIV (April, 1964), pp. 13-15.

[9]Lloyd, loc. cit.

A newly developed approach to large group instruction is the programmed course which illustrates another approach to improved results in typewriting skills within the framework of a large class.

> Programmed instruction means that the children advance at their own rate, doing the program bit by bit regardless of how well classmates do. Thus the superior student races ahead without being slowed down by a class cadence that hinges on the progress rate of the slow child; and the child who is slow advances at his own pace, without failure, and without the frustration of being compared constantly with more efficient learners.[10]

Several of the publishing companies have now prepared "programmed kits" to accompany their textbooks, and these are being used in a number of high school and junior high schools throughout the country.

Business education curriculum

In this day of change in our educational philosophy and with the shift in emphasis which is occuring in our expanding curriculum, every teacher must be aware of his own contribution and be alert to the realistic values of each subject he teaches. The teacher must be cognizant of and versed in the many different ways of approaching the subject matter.

Conant indicated the importance of a course in typewriting for every day use as well as for college-bound students.[11] The business education program should be designed to meet the needs of those students interested in preparing for employment in the world of business. The basis for designing the programs should be to meet in the most effective and economical manner the range of abilities, interests and needs of each student.

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[10]Lloyd, loc.cit.

[11]James B. Conant, Slums and Suburbs, (New York: McGraw-Hill, 1961), p. 43.

PROCEDURE

Population

The population serving this investigation consisted of those students of the Ed W. Clark High School who were enrolled in the first year of typewriting during the 1965-66 academic year.

Sample

The sample serving the current investigation consisted of those students who were randomly assigned to each of two "large groups" in first-year typewriting and to one of three "small groups" in first-year typewriting taught by the same instructor.

Instruments

1. The instrument employed to assess degree of typewriting skill achievement was the teacher-developed three-minute timed writings. Pre- and posttest word gain was determined by the following formula:

$$\text{Net words} = \frac{(\text{words/min} \times 3) - \text{errors} \times 3}{3}$$

2. The instrument used in an attempt to predict typewriting skill success was the Coding sub-test of the Wechsler Intelligence Scale for Children. The Coding sub-test is designed to assess perceptual speed; memorising; learning to associate unfamiliar symbols with familiar numerals under obvious pressure of time limits; continuous shifting of mental set; persistent effort and attention; visual-motor coordination and psycho-motor speed. A duplicate of the Coding sub-test appears in Appendix A of this paper.

Method

One female typewriting teacher, Mrs. Arlene Parkinson, instructed a "large group" (N=68) in typewriting skills and two "small groups" (N= 32 and 29) in typewriting skills employing essentially the same teaching techniques for all groups.
One male typewriting teacher, Mr. Ronald Hahn, instructed one "large group" (N=63) in typewriting skills and one "small group" (N=23) in typewriting skills using essentially the same teaching techniques for both groups and similar to those techniques used by Mrs. Parkinson.

Every student included in the experiment was administered the Coding sub-test of the Wechsler Intelligence Scale for Children and a three-minute timed writing test in typewriting skills (pre-tests administered in September, 1965). Each student who remained in the program during the 1965-66 academic year was again administered a timed three-minute typewriting skills test (post-tests administered in May, 1966). Pre- and posttest interim gains between groups were compared. A relationship between the Coding sub-test and typewriting skill achievement was computed. A regression equation for predicting success in typwriting skill from the Coding sub-test was completed.

The reader should refer to Appendix B of this paper for a more detailed description of the procedures employed by the teachers involved in this investigation.

RESULTS

The results of this investigation indicate that the first hypothesis must be accepted.(Small groups consisting of less than 30 students in number will not achieve significantly greater in typewriting skills than will large groups including more than 60 students in number). Table 1 offers the reader the results of an analysis of covariance treatment of the data. It will be noted that the "F" ratio reached .40, indicating that none of the five typing groups made greater typewriting skill gains than the others.

Table 1. Analysis of Covariance for Large and Small Group Typewriting Skill Achievement

Source of Variance	Degrees of Freedom	Sums of Squares	Mean Square	F
Among	4	28.40	7.10	.40*
Within	209	3692.65	17.67	

*not significant

The results of the current investigation indicate that the second hypothesis must be rejected (A positive and significant relationship between the Coding sub-test of the Wechler Intelligence Scale for Children and achievement in typewriting will be discovered). A non-significant relationship of .02 was reached between the Coding sub-test and typewriting achievement.

Analysis of data dictate that the third hypothesis must be rejected (The Coding sub-test of the Wechsler Intelligence Scale for Children will effectively predict success in typewriting skills). The regression equation for predicting typewriting success from the Coding sub-test

(X= .01Y + 27.19)

shows that the Coding sub-test may not be successfully used to predict achievement in typewriting.

CONCLUSIONS

The following conclusions may be drawn from the findings of this investigation:

1. Groups of students which number from 63 to 68, "large groups," may be taught first-year typewriting skills as effectively as "small groups," groups numbering 30 or less.

2. The Coding sub-test of the Wechsler Intelligence Scale for Children may not be used to predict achievement in first-year typewriting skills.

IMPLICATIONS

The present discovery that "large groups" of typewriting students may be as effectively taught typewriting skills as "small groups" of typewriting students might lead to a grouping practice in first-year typwriting classes which permit more individual instruction for the "slower" typewriting student. Perhaps typewriting classes may reach a total of 100 or more students in "large group instruction," thus leaving periods which may include but 10 students for a more individualized approach to teaching typewriting skills.

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APPENDIX A

CODING B
(6-15)

1	2	3	4	5	6	7	8	9
÷	)	+	⊢	¬	∨	(	·	⊣

SAMPLE

2	1	4	6	3	5	2	1	3	4	2	1	3	1	2	3	1	4	2	6	3	1	2	5	1

3	1	5	4	2	7	4	6	9	2	5	8	4	7	6	1	8	7	5	4	8	6	9	4	3

1	8	2	9	7	6	2	5	4	7	3	6	8	5	9	4	1	6	8	9	3	7	5	1	4

9	1	5	8	7	6	9	7	8	2	4	8	3	5	6	7	1	9	4	3	6	2	7	9	3

TIME (120")_____ SCORE (NO. RIGHT)_____

APPENDIX B

Procedure, Mrs. Arlene Parkinson

During the first few weeks of this assignment it seemed to the teacher that she was not able to communicate as well with the large class as with the two small ones. It was hard for the instructing teacher to know just how each student in the large class was doing and there was less assurance on her part that the students were really understanding instructions. She found it hard to demonstrate because there were always students who couldn't see the machine she was using and she felt handicapped somewhat by the lack of charts and the minimal use she could make of the chalk board. This latter problem was caused because the microphone cord did not reach to the chalk board and normal voice did not carry to all parts of the room.

The students seemed to adjust very rapidly to the large class, expected two teachers to be there, and welcomed help from either teacher.

By the end of the first six week period the students had become familiar with the keyboard, the large class was with the small classes, and the teacher felt that one teacher could handle instruction from that point on. The assisting teacher was given another assignment.

At the end of the first nine weeks it was decided to start instructing through the use of individual assignment sheets. In this way each student could progress at his own rate. It was set up so that a notebook containing completed problems was handed in once a week, and the student received a "quantity" and a "quality" grade on each notebook. The quantity grade was based on 4 acceptable problems as a D, 6 acceptable problems a C, 8 was a B, and 10 was an A. The quality grade was based on thorough checking of two or three problems for accuracy of set up as well as accuracy of typing.

This individualized method was met with enthusiasm by the students. However, within a two week period it was apparent there was such a gap between fast and slow students that instructional lectures did not have a meaning for all students.

By the fifteenth week the enthusiasm of the students had waned considerably. Not as many problems were being turned in nor were there as many students typing in the before school and after school hours.

By the end of the first semester the teacher decided to try a new seating arrangement to see if instruction could be more closely related to what the student was doing. The students were seated according to the assignment sheet on which they were working so that the teacher could lecture on different days to different groups and on the assignments on which each group was working.

The teacher also decided to use a new basis for handing in notebooks. At the beginning of each grading period she would determine a minimum number of notebooks to be handed in for each grade, i.e., 5 for an A, 4 for a B, 3 for a C, 2 for a D, or whatever the teacher set up. Each notebook would consist of all problems on an assignment sheet and there would be no weekly "due" date; the notebooks would be handed in when completed.

This method was used during the second semester and, generally speaking, the teacher felt it was more successful both from the students' standpoint and the teacher's standpoint. Some notebooks came in almost every day instead of all at one time.

At the end of the school year there was a wide divurgence in achievement as represented by the two tables which follow.

Table 1. Percent of Students who Completed Assignment Sheets*

	Assignment Sheets															
Class	19	18	17	16	14	13	12	11	10	9	8	7	5	4	3	2
1**		3	15	3	3		3	21	6	14	9	3	3	6	6	3
6**			3	3	6		3	9		9	12		33	15	3	3
3***	4	4	2	4	3	3	7	12	12	8	2	11	10	2	6	6

*Assignment sheet Nos. 6 and 15 were omitted because all members of all classes did these assignments at the same time.

**Small class

***Large class

Table 2. Percent of Students who Completed Assignment Sheets

Class	Assignment Sheets 19 - 10	9 - 0
1**	55	44
6**	24	75
3***	51	49

**Small class
***Large class

If one were to take half the prepared assignment sheets as representative of half of the course, it would seem that approximately 50 percent of the students in Class 1 and Class 3 finished one semester's work and that only 25 percent of Class 6 finished this work. However, during the last six weeks period, all members of all classes were exposed to some of the most important parts of the second semester's work. This was review for some, new for others.

It is intended, during the 1966-67 school year, to have two large classes with a completely heterogeneous grouping as to grade level, age, or ability. In this way any conclusions reached can be applied to normal large group instruction.

One of these classes will be taught using the traditional daily class assignment method. The other class will be taught using the individual instruction method. Basically, this latter method will be the same method used during the second semester of the 1965-66 school year, i.e. seating according to achievement on the instruction sheets with lectures to the various groups according to the instruction sheet. However, it is hoped that the following changes in method can be made:

1. When a student in the traditional class is found to be achieving much better than his classmates, it is hoped that he can be moved to the individual instruction class so that his achievement will not be slowed by his classmates.

2. When a student in the individual instruction class is found to be lagging far behind the rest of the class, it is hoped that he can be moved into the traditional class where he receives instruction on a daily basis.

3. It is hoped that the students in the individual instruction class can be told at the first of the year that when they finish all the assignment sheets, with an average grade, they will no longer need to report to typing or that completion of a certain number of assignment sheets means ½ credit, 1 credit or 1½ credits. It is believed either of these methods offer extra incentive.

4. Since the figures show that at least 50 per cent of the students in all classes during 1965-66 did not finish more than half of the available assignment sheets, these students missed much of what was available to be learned. Therefore, it is intended to use production timings throughout the year which means that everyone will receive instruction on new material and will immediately complete an assignment covered by these instructions. In this way everyone will be exposed to a year's work, but not all students will learn the work in depth.

Procedure, Mr. Ronald D. Hahn

"Something Extra at Clark" is generally accepted as ordinary at the new Ed W. Clark High School, and the business education department has made an effort to see that its typing students do receive the extra.

Typing has been taught for many years in basically the same manner. With the opening of Clark High and its unique classroom design, the business education department prepared to investigate past methods and to try to find new and better procedures for teaching typewriting.

A careful study of teaching procedures suggested that according to material presentation both large and small group instruction be used for the most effective use of time and facilities.

Ronald Hahn and Mrs. Arlene Parkinson agreed to cooperate in a project whereby each instructor would have a large class of approximately 100 students and a smaller traditional group of 35 students. Each instructor serves as the master teacher in the large group, being assisted by the cooperating teacher. The teacher instructs the small group in much the same manner as used in the past. After nine weeks Mrs. Parkinson began instructing her large group alone.

From the criteria used for evaluation, the end of the year should indicate whether large groups may be taught as effectively as the smaller traditional group. There will also be some comparison of whether or not two teachers are needed, or whether one can successfully teach the larger group. A comparison between eighth and ninth graders might indicate the age readiness of students for a skill course.

Many criteria were established to validate the research findings. A hand-eye coordination test was administered early in the year by Dr. George Jeffs, director of research at Clark, to see if there was any relationship between hand-eye coordination and typing skill.

Three-minute timed writings were given upon the completion of keyboard instruction, and will be compared with the same length timed writings to be given in May.

Past reading scores from standardized tests were used to determine the relationship of reading ability to typing.

Along with the large groups, appeared the problem of wider class ranges and a greater class variance in such areas as intelligence, mental and physical development, and mathematical comprehension. An effort was made to establish a

program where each individual could progress and develop at his own rate and according to his own initiative and capabilities.

A procedure for this individual progress was established through the use of a weekly assignment sheet, designed to cover a particular unit of study ordinarily presented in one week.

The assignment sheet consisted of ten typing jobs, each designed to cover a particular objective. The more astute student can complete more than one assignment sheet per week and may proceed more rapidly than the student who is capable of completing only a portion of an assignment sheet. Each student handed in whatever he had completed at the end of each week and received both a quantity and a quality grade.

All jobs turned in must be acceptable to count for the quantity grade; i.e., must be properly set up, with a minimum numbers of errors, to receive quantity credit.

Under the former system, a student who could not progress as rapidly as his peers would receive a failing grade both semesters. The newer method makes allowance for the slower-progressing student since he may have a year in which to complete satisfactorily a semester's requirements. He will then receive one-half credit in typing.